FIG. 1A

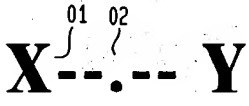



FIG. 1B

**V2.03R**

FIG. 2A

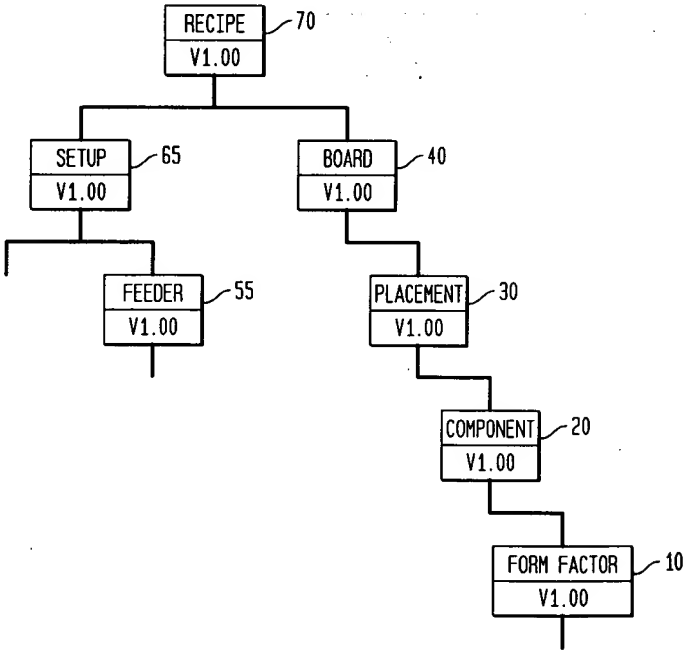


FIG. 2B

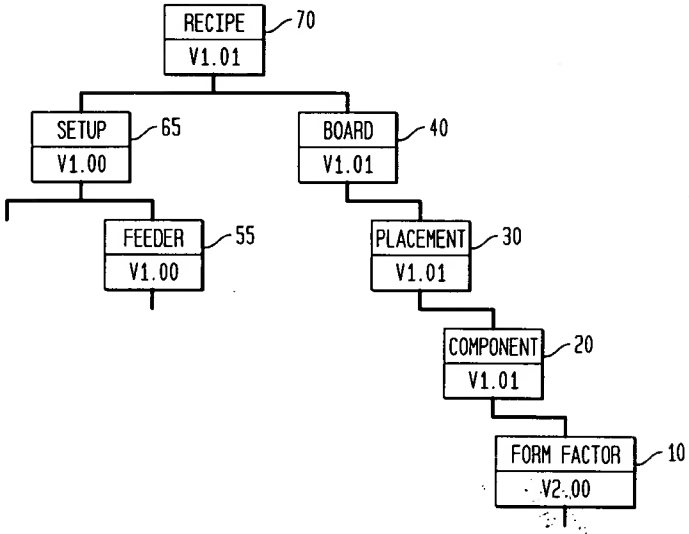

RECIPE
V1.01
70
SETUP
V1.00
65
BOARD
V1.01
40
FEEDER
V1.00
55
PLACEMENT
V1.01
30
COMPONENT
V1.01
20
FORM FACTOR
V2.00
10

FIG. 2C

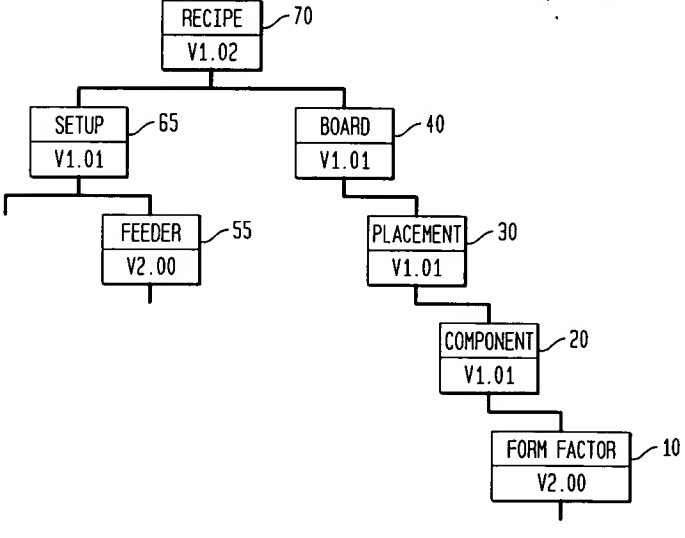

RECIPE
V1.02
70
SETUP
V1.01
65
BOARD
V1.01
40
FEEDER
V2.00
55
PLACEMENT
V1.01
30
COMPONENT
V1.01
20
FORM FACTOR
V2.00
10

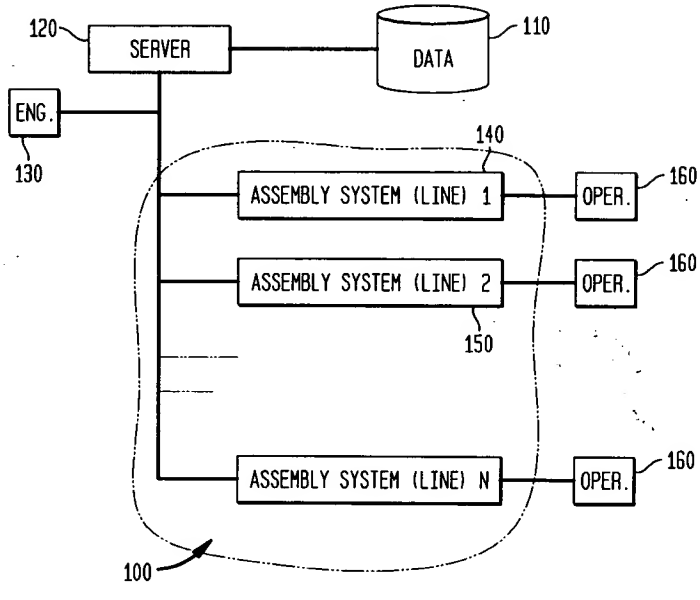
*FIG. 3*

| Event | User | Action | Object | Name | Version |
|---|---|---|---|---|---|
| 1 | Eng/Op | Programs a board | Recipe-1 | Board | V1.00 |
| 2 | Eng/Op | **Modifies** the same board | " | " | " |
| 3 | Eng/Op | Downloads Recipe-2 for Smartphone line | Recipe-1<br>Recipe-2 | Board<br>SPLine | "<br>" |
| 4 | LINE...<br>..... | Runs board & requests validation | " | " | " |
| 5 | Eng/Op | Checks board & finds error | Recipe-1 | Board | " |
| 6 | Eng/Op | **Corrects** program | " | " | " |
| 7 | Eng/Op | Downloads recipe | Recipe-1<br>Recipe-2 | Board<br>SPLine | "<br>" |
| 8 | LINE...<br>..... | Runs board & requests validation | " | " | " |
| 9 | Eng/Op | Checks board and **Releases** it | **Recipe-1**<br>**Recipe-2** | **Board**<br>**SPLine** | **V1.00R**<br>**V1.00R** |
| 10 | At a later time, Eng/Op wants to modify sub-object SOT23 | | Package Form | SOT 23 | V1.00R |
| 11 | Eng/Op | **Modifies SOT23** | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | V2.00<br>V1.01<br>V1.01 |
| 12 | Eng/Op | Downloads Recipe-2 and runs board | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | V2.00<br>V1.01<br>V1.01 |
| 13 | LINE...<br>..... | Runs board & requests release of Recipe-1/2 (line/board) | " | " | " |
| 14 | Eng/Op | Checks pkg.& **validates** it, which is equivalent to releasing it for a single line. | **Pkg. Form**<br>**Recipe-1**<br>**Recipe-2** | **SOT 23**<br>**Board**<br>**SPLine** | **V2.00R**<br>**V1.01R**<br>**V1.01R** |
| 15 | At a later time, Eng/Op downloads program | | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | V2.00R<br>V1.01R<br>V1.01R |
| 16 | LINE...<br>..... | Runs board with **no modifications** | " | " | " |
| 17 | At a later time, Eng/Op downloads a different **recipe (3) with the same SOT 23 as modified earlier in V1.01.** | | Recipe-3 | Pocket PC | V1.00R |
| 18 | Eng/Op | finds problem and **differently modifies** SOT23 again | Recipe-3<br>Pkg.Form2 | Pck.PC<br>SOT 23 | V1.01<br>V3.0 |
| 19 | Eng/Op | downloads program to line | " | " | " |
| 20 | LINE...<br>..... | Runs board & requests release | " | " | " |
| 21 | Eng/Op | Checks board and **Releases** it | **Recipe-3**<br>**Pkg.Form2** | **Pck.PC**<br>**SOT 23** | **V1.01R**<br>**V3.0R** |
| 22 | SYSTEM | Automatically updates recipes at the Enterprise level | Pkg. Form<br>Recipe-1<br>Recipe-3 | SOT 23<br>Board<br>Pck.PC | **V3.00R**<br>**V1.02R**<br>**V1.02R** |

FIG. 4

| Step | User | Action | Object | Name | Version |
|---|---|---|---|---|---|
| 23 | Engineer | Programs a board | Recipe-1 | Board | V1.00 |
| 24 | Engineer | **Modifies** the same board | " | " | " |
| 25 | Engineer | Downloads Recipe-2 for Smartphone line | Recipe-1<br>Recipe-2 | Board<br>SPLine | "<br>" |
| 26 | LINE...<br>..... | Runs board & asks Operator to validate recipe/board | " | " | " |
| 27 | Operator | Checks board & finds error | Recipe-1 | Board | " |
| 28 | Operator | **Corrects** program | " | " | " |
| 29 | Operator | Downloads recipe & runs board | Recipe-1<br>Recipe-2 | Board<br>SPLine | "<br>" |
| 30 | LINE...<br>..... | Runs board & asks Operator to validate recipe/board | " | " | " |
| 31 | Operator | Checks board and **validates** it | **Recipe-1**<br>**Recipe-2** | **Board**<br>**SPLine** | **V1.00V**<br>**V1.00V** |
| 32 | At a later time, **Operator** finds some issues on SOT23 | | Package Form | SOT 23 | V1.00R |
| 33 | Operator | **Modifies SOT23** | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | V2.00<br>V1.01<br>V1.01 |
| 34 | Operator | Downloads recipe for Smartphone Line | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | V2.00<br>V1.01<br>V1.01 |
| 35 | LINE...<br>..... | Runs board & requests release | " | " | " |
| 36 | Operator | Checks board and **Validates** it | **Pkg. Form**<br>**Recipe-1**<br>**Recipe-2** | **SOT 23**<br>**Board**<br>**SPLine** | **V2.00V**<br>**V1.01V**<br>**V1.01V** |
| 37 | **Engineer** informed of modification | | | | |
| 38 | Engineer | approves modification & **Releases SOT23** | **Package Form** | **SOT 23** | **V2.00R** |
| 39 | Operator | Downloads to different line Released objects are also released on a different line, validated objects have to be validated again | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | V2.00R<br>V1.01<br>V1.01 |
| 40 | LINE 2 | Runs board and asks operator to validate recipe/board | | | |
| 41 | Operator | checks program and **validates** it | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | **V2.00R**<br>**V1.01V**<br>**V1.01V** |
| 42 | Engineer | checks program and **releases** it | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | **V2.00R**<br>**V1.01R**<br>**V1.01R** |
| 43 | Operator | Downloads program to a third line | Pkg. Form<br>Recipe-1<br>Recipe-2 | SOT 23<br>Board<br>SPLine | **V2.00R**<br>**V1.01R**<br>**V1.01R** |
| 44 | LINE 3 | Runs board since it is a released program | | | |

FIG. 5


120
SERVER
DATA
110
ENG.
130
140
ASSEMBLY SYSTEM (LINE) 1
OPER.
160
ASSEMBLY SYSTEM (LINE) 2
OPER.
160
150
ASSEMBLY SYSTEM (LINE) N
OPER.
160
100